

Basics of Writing Review Articles

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Evidence-based medicine forms the essence of medical practice in the modern world. No wonder review articles are the mainstay for evidence-based medicine.

Review articles provide a critical summary of the existing literature to explain the current state of scientific evidence on a particular topic. A well-written review article must summarize key research findings, reference must-read articles, describe current areas of agreement as well as controversies and debates, point out gaps in current knowledge, depict unanswered questions, and suggest directions for future research (1).

During the last decades, there has been a great expansion in the range of review methodologies resulting in many new review types (2,3). In an attempt to classify review types, Sutton et al. defined 48 different review types which they categorized into seven review families: traditional reviews, systematic reviews, review of reviews, rapid reviews, qualitative reviews, mixed method reviews and purpose specific reviews (for the full list of review types please see Sutton et al.) (2). To date, traditional reviews and systematic reviews have been most widely used in the field of medicine.

Traditional reviews usually cover advances in different aspects of a chosen topic and provide assessment of the subject within a broad spectrum. No formal guidance exists for traditional reviews. However, they have become increasingly more comprehensive and systematic since the emergence of systematic reviews. Narrative review, narrative summary, critical review, integrative review, and state of the art review are examples of traditional reviews (2).

Systematic reviews adopt a specific aim and a well-defined, rigorous methodology to enlighten a particular question. They usually focus on specific study types such as randomized controlled studies, observational studies, etc. They have well-defined reporting standards and guidance. Systematic reviews provide the highest level of evidence in medical sciences, playing an important role in the development of clinical guidelines (4). Meta-analysis is the most popular example of quantitative systematic review types.

Highlights

- Review articles summarize the current state of evidence on a particular topic
- Review articles translate the relevance of evidence for readers
- Independent of the review type, all reviews must have a predefined methodology
- The methods utilized for the review should be explained clearly in the review paper
- Review papers should be written in a structured format

Considering the overwhelming number of diverse review types, the initial burden authors face is to choose the review type that matches their purpose best. Despite the continuous rise in the number of review types, there are sources that provide guidance about this issue (5). Authors are highly recommended to examine and learn about different review methodologies before they decide on their review approach.

International guidelines such as PRISMA (6), Cochrane (7), and JBI (8) provide detailed information about how to conduct reviews starting from the planning and protocol writing phases. The purpose of these international guidelines is to ensure transparent, unbiased, and complete reporting. Although the guidelines are focused on systematic reviews, they can also be used as bases for conducting other types of reviews. PRISMA encourages journal editors and reviewers to use the guideline for evaluation of review papers. PRISMA checklist is available online in different languages including Turkish at www.prisma-statement.org (9).

No matter what type of review is undertaken, the key points in a review article are to have a predefined methodology which is

Cite this article as: Erol A. Basics of Writing Review Articles. Arch Neuropsychiatry 2022;59:1–2.

clearly explained in the text, and to have a structured format. Just like research papers, the most common and convenient practice is to write review papers in “introduction, methods, results, and discussion (IMRaD)” format accompanied by title, abstract, key words, and references.

The title makes the first introductory and is the most important sentence of the review paper. Like research paper titles, it must be brief, informative, and interesting all at the same time. It must contain the key words or their derivatives to increase the discoverability of the article via search engines. In addition, the type of the review should be accurately stated in the title.

The aim of the introduction is to explain why the review is undertaken and to persuade the readers for its necessity. In the introduction section, the authors must mention the latest developments about the subject of concern and explain why a review is needed. It is a good practice to refer to previous review papers on the subject and state what makes the current review different than the previous ones.

The methods section of the review paper should be written detailed enough to prove its adequacy and make it possible to be reconducted including more recent papers in the future. Explicit scientific methods are required for systematic reviews as defined by international guidelines (7-9). Although no guidelines exist for traditional narrative reviews, they too should have a rational methodology explained clearly. The methods section of every review article should state the key words used for the search, data bases screened, and the time frame chosen for the literature search. It should also explain the inclusion and exclusion criteria used for the selection of papers.

The results section should include a flow chart which shows the number of identified, included, and excluded papers along with the reasons for exclusion, as described in PRISMA flow diagram guidelines (9). Results section should cite and present characteristics and outcomes of each one of the included studies, providing the necessary information to assess their quality, validity, and contribution. The most relevant information about the included articles should be depicted in literature summary tables. They are an essential part of the review article as they provide information at one glance and make the paper more readable. Literature summary tables must contain information about methods, frameworks, strengths, limitations, and conceptual contribution of each article (10). Oversized tables must be presented as supplementary files.

Discussion section provides a general interpretation of the results and presents expert opinion. Writing a review article is not only about extracting relevant previous work and analyzing them, but also about making synthesis and drawing conclusions. Therefore, providing an objective interpretation of the results and guiding readers for better understanding of the current evidence should form the central part of the discussion. Wherever there is not enough evidence to make objective conclusions, the lack of evidence should be stated instead. Limitations, biases and gaps of the included literature should be discussed along with the limitations of the review process itself. It is critical to discuss the potential impacts of the results for future research and clinical practice.

In conclusion, reviews are objective attempts to examine the current state of evidence on a particular topic and its impacts. A review paper should explain why the review is undertaken, describe the methodology used, introduce the articles included, and provide expert opinion on the evidence achieved in a structured format. High quality reviews are essential in guiding clinical practice and future research along with policy making.

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